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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,205	09/30/2003	Masatsugu Okazaki	393032041500	7106
7590	01/24/2006		EXAMINER	
David L. Fehrman Morrison & Foerster LLP 35th Floor 555 W. 5th Street Los Angeles, CA 90013			QIN, JIANCHUN	
			ART UNIT	PAPER NUMBER
			2837	
DATE MAILED: 01/24/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/676,205

Applicant(s)

OKAZAKI ET AL.

Examiner

Jianchun Qin

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 November 2005.  
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 6-12 and 33-44 is/are pending in the application.  
 4a) Of the above claim(s) 12 is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-4, 6-9 and 33-37 is/are rejected.  
 7) ☒ Claim(s) 8, 10, 11 and 38-44 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All b) ☐ Some \* c) ☐ None of:  
 1. ☒ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 9/30/03.  
 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_  
 5) ☐ Notice of Informal Patent Application (PTO-152)  
 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restriction***

1. Per Applicants' response dated 11/21/05, a provisional election was made with traverse to prosecute species I of claims 1-6 and 7-11 (claims 7-11 was originally in species II, however these claims were amended to be a species of amended claim 1).

Claim 5 has been canceled.

Claims 13-32 are canceled without prejudice.

Regarding claim 12, according to Applicants' response, claim 12 reads on species II, which was not elected by the Applicants. Accordingly, claim 12 is withdrawn from further consideration by the Examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention. Applicants' traversal is noted by the Examiner, however, the arguments are not persuasive. It is the Examiner's position that independent claim 12 is distinctly directed to the species best illustrated by the specification on page 7, line 22 – page 10, line 7. Restriction for examination purposes as indicated stands.

The requirement is still deemed proper and is therefore made FINAL. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

2. The addition of new claims 33-44, which are dependent from claims 1, 4 and 10, is acknowledged.

### ***Specification***

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Specifically, the Abstract of the Disclosure is objected to because it can not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1-3, 6, 7, 9, 33 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al. (U.S. Pat. No. 5489746).

With respect to claim 1:

Suzuki et al. disclose a compressed data structure suited for storing of a plurality of samples of compressed waveform data, segmented into a plurality of frames, into a memory, the memory being capable of storing n bits per address (col. 1, lines 60-67; col. 2, lines 20-40; col. 4, lines 54-61), wherein a number of bits per sample of the compressed waveform data is variable between the frames, but uniform within each of the frames (Figs. 2 and 3; col. 3, lines 50-59; col. 4, lines 28-56), each of the frames of the compressed waveform data is stored over a predetermined number j of successive address of said memory (col. 3, lines 50-59; col. 4, lines 28-56), and each of the frames includes, in a predetermined layout, an auxiliary information area (Fig.2, HB0 to HB3) for storing auxiliary information that includes compression-related information to be used for decompressing the compressed waveform data, and a data area for storing a plurality of samples of the compressed waveform data of the frame, wherein said compression-related information includes number-of-bits information indicative of said

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number of bits per sample within the corresponding one of the frames (cols. 3-4, lines 60-24; col. 7, lines 11-24; col. 12, lines 3-26; col. 17, lines 34-61).

With respect to claim 2:

Suzuki et al. further disclose: said data area ranges over a plurality of addresses in the j successive address (Fig. 2), and the data area region in each of said plurality of addresses compactly stores a plurality of samples of the compressed waveform data (Figs. 2 and 3; col. 1, lines 60-67; col. 2, lines 20-40; col. 3, lines 36-43; col. 4, lines 54-61).

With respect to claim 3:

Suzuki et al. further disclose: a memory storing compressed waveform data of a plurality of frames having a compressed data structure as defined in claim 1 (Figs. 1-3; col. 1, lines 60-67; col. 2, lines 20-40; col. 3, lines 36-43; col. 4, lines 54-61).

With respect to claim 6:

Suzuki et al. disclose a waveform storage processing apparatus comprising: a compression processing section that compresses a plurality of samples of waveform data (col. 1, lines 17-24; col. 3, lines 36-43; col. 4, lines 54-61); a framing section that segments the plurality of samples of waveform data, compressed by said compression processing section, into a plurality of frames to thereby form the frames (col. 3, lines 50-59; col. 4, lines 54-56), wherein each of the frames has a fixed total number of bits and includes a fixed auxiliary information area and remaining data area, by packing the compressed and segmented waveform data into the data area and packing compression-related information into the auxiliary information area, wherein a number of

bits per sample of the packed waveform data is uniform within each of the frames but variable between the frames, and said compression-related information includes number-of-bits information indicative of said number of bits per sample within the corresponding one of the frames and decompression parameters to be used for the decompression of said compressed waveform data in the corresponding one of the frames (Figs. 1-3; col. 3, lines 50-59; col. 4, lines 28-56; col. 3, lines 50-59; col. 4, lines 28-56; cols. 3-4, lines 60-24; col. 7, lines 11-24; col. 12, lines 3-26; col. 17, lines 34-61); and a writing section that, for each of the frames, writes the frame, formed by said framing section, into memory capable of storing  $n$  bits per address, over a predetermined number  $j$  of successive address (col. 3, lines 36-43; col. 4, lines 54-61).

With respect to claim 7:

Suzuki et al. further disclose: a compressed data structure as claimed in claim 1, wherein  $m$  bits of the  $n$  bits (where  $m < n$ ) in the  $j$  addresses of said memory contain said data area, and a remaining " $n-m$ " bits of the  $n$  bits in the  $j$  addresses of said memory contain said auxiliary information area (Fig. 2, col. 17, lines 49-60).

With respect to claim 9:

Suzuki et al. further disclose: a memory storing a plurality of frames of compressed waveform data having a compressed data structure as defined in claim 7 (Fig 2; col. 1, lines 60-67; col. 2, lines 20-40; col. 3, lines 36-43; col. 4, lines 54-61).

With respect to claims 33 and 34:

Suzuki et al. further disclose: said compression-related information further includes decompression parameters to be used for the decompression of said

compressed waveform in the corresponding one of the frames (cols. 15-16, lines 60-14; col. 17, lines 34-60); said auxiliary information further includes loop addresses to be used for generation of a tone (col. 17, lines 34-60).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (U.S. Pat. No. 5489746, hereafter referred to as Suzuki-I) in view of Suzuki et al. (U.S. Pat. No. 5831193, hereafter referred to as Suzuki-II).

With respect to claim 4:

Suzuki-I discloses a tone generation apparatus comprising: a memory as defined in claim 3 (Figs.1-3; col. 1, lines 60-67; col. 2, lines 20-40; col. 3, lines 36-43; col. 4, lines 54-61); a readout section that designates, on the basis of a readout address, any one of the frames to be read out and reads out stored data of the designated frame from said memory address by address (Figs. 1 and 4; col. 7, lines 1-10); an auxiliary information retrieval section that, of the data of the frame read out by said readout section, retrieves the auxiliary information from the auxiliary information area (Figs. 1 and 4; col. 7, lines 11-24); a compressed waveform data retrieval section that, of the



data of the frame read out by said readout section, retrieves the samples of the compressed waveform data from the data area in accordance with the number of bits per sample designated by said number-of-bits information included in the auxiliary information retrieved by said auxiliary information retrieval section (Figs. 1 and 4; col. 7, lines 4-35); a decoding section that decompresses each of the samples of the compressed waveform data retrieved by said compressed waveform data retrieval section (Figs. 1 and 4; col. 7, lines 25-35); and a tone generation section that generates a tone on the basis of the waveform data decompressed by said decoding section (Figs. 1 and 4; col. 7, lines 36-44).

Suzuki-I does not mention expressly: an address generation section that generates, every sampling cycle, a readout address varying at a predetermined rate corresponding to a designated tone pitch.

Suzuki-II discloses a method and device for forming a tone waveform, an teaches: an address generation section that generates, every sampling cycle, a readout address varying at a predetermined rate corresponding to a designated tone pitch (cols. 18-19, lines 54-3).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Suzuki-II in the invention of Suzuki-I in order to generate a readout address such that the pitch of the readout waveform can be controlled in accordance with a desired reproduction rate (Suzuki-II, col. 5, lines 35-45; col. 19, lines 1-3).

With respect to claims 35-37:

Suzuki-I further disclose: said compression-related information further includes decompression parameters to be used for the decompression of said compressed waveform in the corresponding one of the frames, and said decoding section decompressed each of the samples of the compressed waveform data, using the decompression parameters included in the auxiliary information retrieved by said auxiliary information retrieval section (col. 7, lines 11-35; cols. 15-16, lines 60-14; col. 17, lines 34-60); said decompression parameters are parameters created on the basis of compression parameters used in compressing original waveform data to create said compressed waveform data (col. 7, lines 25-35; col. 17, lines 34-60); said decompression parameters are loop addresses for repetitively reading out said compressed waveform data (col. 7, lines 25-35; col. 17, lines 34-60).

#### ***Allowable Subject Matter***

8. Claims 8, 10, 11 and 38-44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Reasons for Allowance***

9. The following is an examiner's statement of reasons for allowance:

The primary reason for the allowance of claim 8 is the inclusion of the limitation that said  $m$  is  $k$  times a number of bits  $l$  per sample of the compressed waveform data of the frame, where  $k$  is an integral number equal to or greater than one. It is this

limitation found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

The primary reason for the allowance of claims 10, 11 and 38-44 is the inclusion of the limitation that said compressed data retrieval section further comprises a temporary storage section that stores the data of the m bits among the data of the m bits, successively read out section, and compressed waveform data retrieves the samples by taking out each of the samples of compressed waveform the data of the m bits stored temporary storage section, in accordance with the readout address generated by said address generation section and the number of bits per sample designated by said number-of -bits information. It is this limitation found in each of the claims, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### ***Prior Art Citations***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) Lattibeaudiere (U. S. Pat. No. 5438535) is entitled "Content addressable memory system".

2) Sato (U. S. Pat. No. 6300552) is entitled "Waveform data time expanding and compressing device".

3) Divine et al. (U. S. Pat. No. 6081783) is entitled "Dual processor digital audio decoder with shared memory data transfer and task partitioning for decompressing compressed audio data, and systems and methods using the same".

#### ***Contact Information***


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jianchun Qin whose telephone number is (571) 272-5981. The examiner can normally be reached on 8:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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